



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,862	09/09/2003	Christopher Richard Doerr	Doerr 73-13 (LCNT/125620)	2054
46363	7590	10/13/2005	EXAMINER	
MOSER, PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			KIANNI, KAVEH C	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,862

Applicant(s)

DOERR ET AL.

Examiner

Kianni C. Kaveh

Art Unit

2883

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,9 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,9 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Applicant's canceling of claims 2, 5-8, 10-29, in the amendment/response submitted on 08/01/05 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 3-4, 9, and 30-32 are rejected under 35 U.S.C. 102(a) as being anticipated by Doerr et al. 'Cross-connect-type wavelength add-drop node with integrated band muxes, interleavers, and monitor' Doerr et al., Optical Society of America, 23-28 March 2003, p. PD33-1-3 vol. 3 of 3 vol. (v1+802+138) pp. 6 refs.

note: the following claimed invention is directed to the applicant's drawings depicted in Figs. 1 and/or 3 which are analogous to the prior art teachings depicted in at least fig. 2 a-c, specifically Fig. 2(c) as follows:

Regarding claim 1, Doerr et al. teaches an interleaver (shown in at least fig. 2), comprising:

An input Y-branch waveguide having a first output and a second output (shown in fig. 2c, item outputs of Y-branch waveguide) ;

a first phase shifter, disposed between the first Y-branch waveguide output and a first input of a first multi-sectional coupler the first multi-sectional coupler comprising at least two couplers connected in series (shown in fig. 2c, items phase trimmers/shifters and

two couplers between the first pair of phase shifters and a second pair of phase shifters);

a second phase shifter disposed between the second Y-branch waveguide output and a second input of the first multi-sectional coupler (shown in fig. 2c, items phase trimmers/shifters and two couplers in series between the first pair of phase shifters and a second pair of phase shifters);

a third phase shifter, disposed between a first output of the first multi sectional coupler a first input of a second multi-sectional couple, the second multi-sectional coupler comprising at least two couplers connected in series (shown in fig. 2c, items phase trimmers/shifters and two couplers in series in its output side as well as between the first pair of phase shifters and a second pair of phase shifters); and

a fourth phase shifter disposed between a second output of the first multi-sectional coupler a second input of the second multi-sectional coupler (shown in fig. 2c, items phase trimmers/shifters and two couplers in series in its output side as well as between the first pair of phase shifters and a second pair of phase shifters);

wherein a first output of the second multi-sectional coupler is associated with a first group of optical channels (shown in fig. 2c, items output of the 2nd multi-sectional

coupler is associated with a first group of optical channels shown with arrows): and

a second output of the second muff-sectional coupler is associated with a second group of optical channels (shown in fig. 2c, items phase trimmers/shifters and two couplers in series in its output side as well as between the first pair of phase shifters and a second pair of phase shifters).

Regarding claims 3-4, 9, and 30-32 Doerr et al. further teaches wherein each of said multi-section optical couplers comprises a chain including three optical couplers where adjacent couplers are coupled using waveguides each selectively providing a pre-determined phase shift (shown in fig. 2c, items 3 optical waveguide couplers); wherein the input Y-branch waveguide (shown in fig. 2c, item Y-branch s splits power of an input optical signal between a first output and a second output in a pre-determined ratio); wherein said interleaver is an integrated planar lightwave circuit (see at least abstract); wherein each of said phase shifters is a controlled thermooptic heater (shown in at least fig. 2c, items 4 thermooptic heaters); wherein in the multi-sectional coupler one optical waveguide couples a first output of a first optical coupler to a first input of a second optical coupler, another optical waveguide couples a second output of a first optical coupler to a second input of a second optical coupler, yet another optical waveguide couples a first output of a second optical coupler to a first input of a third optical coupler, and still another optical waveguide couples a second output of a second optical coupler to a second input of a third optical coupler (shown in at least Fig. 2c items waveguide couplers of the multi-sectional coupler coupling inputs and/or outputs of inputs and/or output couplers); wherein each of said optical couplers is selected from the group consisting of an evanescent coupler and an adiabatic coupler (shown in at least fig. 2c, item couplers with evanescent and/or adiabatic coupling structure).

Response to Arguments and Amendment

Applicant's argument filed on 8/01/05 have been fully considered, however, subsequent to the applicant's amendment, the examiner has used a new prior art of the record, as stated above, that teaches all limitations of the claimed invention as stated above.

THIS ACTION IS MADE FINAL

This action in response to applicant's amendment made FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

Art Unit: 2883

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or:

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



**KAVEH KIANNI -
PRIMARY EXAMINER**

K. Cyrus Kianni
Patent Examiner
Group Art Unit 2883

October 3, 2005